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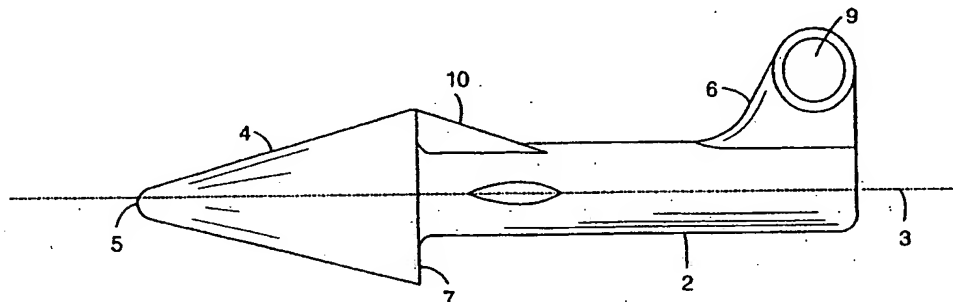
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(54) Title: SURGICAL FASTENER AND DEVICE AND METHOD FOR APPLYING IT



(57) Abstract: The present invention relates to new surgical fasteners and methods of using the surgical fasteners. The surgical fasteners of the invention are in the form of tacks and comprise generally an elongate rod, a sharp conical head, a tail, and a transverse locking member extending from the tail above the plane of the rod. The fasteners are inserted into a bodily cavity for tissue and membrane fixation and approximation by the use of tack applicators. The tack applicators of the invention generally comprise an elongate handle, a loading tip and a carrier assembly that is removably inserted into the loading tip. The tacks are inserted and locked into the carrier assembly from which they may be disengaged.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 941 439 A (KAMMERER ET AL.) 24 August 1999 (1999-08-24) column 5, line 4 - line 50 column 7, line 14 - line 22 figures 1,27-29,41,42	1,9,12, 13,24, 30,36,37
A	US 5 843 084 A (HART ET AL.) 1 December 1998 (1998-12-01) column 13, line 43 - line 50; claim 1; figures 1,18,34	1,2,9, 24,30,36
A	US 5 674 247 A (SOHN) 7 October 1997 (1997-10-07) column 3, line 42 - line 62; figures 1,2	1,9,24, 30,36
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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8 document member of the same patent family

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 246 441 A (ROSS ET AL.) 21 September 1993 (1993-09-21) abstract; figure 1 ---	1,9,24, 30,36
A	US 4 873 976 A (SCHREIBER) 17 October 1989 (1989-10-17) the whole document -----	1,9,24, 30,36

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5941439 A	24-08-1999	AU 7375398 A	08-12-1998
		BR 9804909 A	14-09-1999
		CA 2260134 A	19-11-1998
		CN 1234726 T	10-11-1999
		EP 0936885 A	25-08-1999
		WO 9851179 A	19-11-1998
US 5843084 A	01-12-1998	AU 1055797 A	11-06-1997
		WO 9718762 A	29-05-1997
US 5674247 A	07-10-1997	IL 111985 A	11-04-1999
		AU 4519796 A	03-07-1996
		CA 2207739 A	20-06-1996
		EP 0797410 A	01-10-1997
		JP 10511273 T	04-11-1998
		WO 9618352 A	20-06-1996
		US 5873891 A	23-02-1999
US 5246441 A	21-09-1993	US 5129906 A	14-07-1992
		US 5152765 A	06-10-1992
		US 5203784 A	20-04-1993
US 4873976 A	17-10-1989	AU 4066785 A	24-09-1985
		EP 0174361 A	19-03-1986
		WO 8503857 A	12-09-1985